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Accounting at Energy Firms after Enron
Is the "Cure" Worse Than the "Disease"?

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Executive Summary

The collapse of the Enron Corporation and the revelation of accounting irregularities at Enron and other major corporations have led to a reexamination of the adequacy of accounting, auditing, and disclosure rules in the United States. Many policymakers and commentators have viewed corporate malfeasance as a widespread problem, but the accounting problems that beset Enron and other failed corporations do not appear to be systemic in this country. Thus, the main risk facing equity markets post-Enron has been one of too much political intervention in a market that was already working to right itself.

Enron's senior management engaged in a systematic attempt to use various accounting and reporting techniques to mislead investors. That attempt was facilitated by the rules-based system that guides U.S. generally accepted accounting principles (GAAP), which have conditioned people to look at whether financial statements comply with the rules. But compliance with the rules, important as it is, cannot and does not by itself guarantee bona fide economic results.

Accounting statements may at best give an accurate representation of how a company has performed in the past, but they tell little about how a company will perform in the future and thus about how valuable a company is. For that, economists mostly use discounted cash flow analysis—that is, they estimate the value of a business by obtaining the present value of expected cash flows discounted at an appropriate rate.

The difference between the backward-looking accounting mindset and the forward-looking investment or financial mindset helps explain why, while Enron executives were announcing increased earnings in 2001, Enron's stock price was falling sharply. Indeed, movements in Enron's stock price strongly suggest that investors saw through Enron's accounting machinations months before regulators initiated a formal inquiry into Enron's illegal operating and accounting practices.

Unfortunately, the *political* focus has remained squarely on the measures and bodies that failed to do what they should have in the recent corporate scandals rather than on reinforcing the measures and groups that "processed" the available information in the most timely fashion—that is, the debt and equity markets.

As a result, the Sarbanes-Oxley Act, and other political measures designed to restore confidence in U.S. corporations, will likely have the effect of harming investors by penalizing risk taking on the part of corporate management and increasing the quantity but not necessarily the quality of financial reports.

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Introduction

The collapse of Enron in December 2001 amid a flurry of accusations of misleading accounting, unreliable financial disclosures, and probable criminal behavior has rocked wholesale energy markets and contributed to a downturn in worldwide equity markets. Are the global market reactions predicated on the notion that Enron was just the tip of the iceberg? Are Enron, WorldCom, Adelphia, Global Crossing, and a few others just the first of many corporations to be caught "cooking the books"? If so, falling equity prices may be a reflection of the expectation on the part of investors of a correction in endemically misleading U.S. corporate accounting and disclosure policies. Alternatively, if the problem is not one of systemic corporate corruption and the vast majority of businesspeople and corporations are honest and responsible, the downturn in the U.S. equity markets may actually reflect fear of too many government interventions in a market already working diligently to right itself.

Accounting and disclosure issues that the Enron scandal has created are the focus of this paper. The ultimate goal is to attempt to answer the following question: are current equity market woes driven by a fear of more "Enrons" and "too little post-Enron action" or by the fear of too much overreaction to Enron? In answering that question, the point of departure is an examination of what Enron itself allegedly did wrong: what exactly were Enron's accounting and disclosure sins that are believed to be lurking in so many other companies?

After a summary of what went wrong at Enron, the focus shifts to the bigger issue of *what is wrong with mandated accounting rules* themselves. We argue that earnings can never be more than opinion and that cash flows are the real basis for corporate valuations. With that in mind, we examine some commonly misleading accounting aggregates and explore the central role played by cash flows in modern corporate finance. We then examine what a cash flow analysis of Enron would have shown in 2001, as compared to the firm's stated and misleading earnings releases.

The paper then turns to how estimates of future cash flows are reflected in equity prices. Specifically, consideration is given to how Enron's stock price "processed" information in a manner quite different from the way Wall Street analysts, rating agencies, regulators, and other spectators did. We also analyze the political response to Enron, first by evaluating whether the accounting and disclosure problems that beset Enron appear to be systemic in the United States and then, after concluding the problem is *not* a systemic one, by considering some of the problems and risks of political overreaction to Enron.

Accounting and Disclosure at Enron

The current debate over the adequacy of accounting and disclosure in the United States crosses both industry lines and company types and traces not just to Enron but to the collapse of WorldCom, Global Crossing, and Tyco as well as several other recent public disasters. But Enron was the first and, arguably, far and away the most important and complex.

The black cloud Enron has created now hangs over all U.S. corporations, but there is little doubt that energy companies have borne the greatest part of the brunt through the impact on their equity value, debt ratings, costs of funding, and liquidity issues. Accordingly, we begin by analyzing Enron's sins.

In brief, Enron's senior management and others engaged in a systematic attempt to use various accounting and reporting techniques to mislead investors. The primary areas in which Enron misled investors can be separated into four categories, most of which pertain to the company's energy market activities. We merely state those problems below, offering a more detailed explanation and example shortly thereafter.

- *Wash and Roundtrip Trades:* These are transactions in which there is no real counterparty. Mainly in electricity markets, Enron appears to have essentially been "trading with itself" in a number of cases, seemingly to inflate its revenues and possibly its asset values without generating any tangible economic benefits.
- *Mark-to-Market Accounting:* At least in some cases, Enron improperly applied the useful and well-accepted principle of marking certain open energy transactions to their current market values to create false accounting results.
- *Revenue Recognition:* Enron apparently booked trading revenues on many energy transactions when the deals were first consummated instead of waiting for the actual economic profits to be earned over the life of the transaction.
- *Special Purpose Entities:* Enron used at least certain "special purpose entities" inappropriately to facilitate improper wash trades and mark-to-market accounting. In addition, Enron appears to have used these types of structures outside its energy activities to hide its total indebtedness and to inflate certain asset values.

To illustrate how Enron could have used the above techniques to enhance earnings and inflate its balance sheet, we have constructed a simple example. Suppose Enron enters into a seven-year weather derivatives transaction with a firm at an agreed price of $120 million when the "true" value of the same transaction is $100 million.[1] Suppose the counterparty firm is a special purpose entity (SPE) owned by Enron and established solely for the purpose of conducting transactions with Enron. Then, the transaction is a wash trade—the total cash flows and risks to Enron when considered across the company and the SPE are unaffected by the transaction. The SPE thus does not care whether the $120 million price is correct—it is taking no risk. Enron, however, could book a profit of $20 million to reflect the immediate realization of the increase in the contract's value above its fair value. Note that because this $120 million is an actual transaction price, this profit would be based on the market value of the transaction and not just on its mark-to-market revaluation.

The above transaction makes sense only under certain circumstances. First, the SPE must be essentially a part of Enron. Otherwise, the shareholders of the SPE will never agree to the terms of the initial transaction. Because derivatives transactions are a zero-sum game,[2] an immediate gain of $20 million for Enron implies an immediate loss for the SPE. Second, Enron must not be consolidating the financial statements of the SPE into its own balance sheet; otherwise, the $20 million gain for Enron would just wash with the $20 million loss the SPE takes. Finally, this transaction makes sense only for highly illiquid and customized transactions in which the "true" value of the deal is not easily observable. If no one else was actively trading seven-year weather derivatives, Enron's internal or external auditor or internal risk managers might well have accepted that this was a reasonable market price. But if a liquid market quote had revealed the true value of an otherwise identical trade to be $100 million, then the $120 million valuation likely would have been questioned.

The next step would be for Enron to extrapolate from this single trade to revalue its whole book of seven-year weather derivatives. If this book or portfolio had a prior value of $1 billion, the whole book could now be marked to market at $1.2 billion on the basis of the $120 million price of the transaction between Enron and the SPE. This would create a *notional* profit of $200 million for Enron.

This illustrative transaction would create an accounting profit of $200 million for Enron, but it would actually be cash negative. Enron or others would normally incur a minimum of two cash costs to achieve that notional profit—a bonus to the people involved in creating the notional profit and

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the transaction costs of the deal itself. In an accounting framework this could be depicted as a success at a certain point in time, usually at the end of an accounting period. However, in an economic, or cash flow, framework, that transaction would be value destroying. Although the only people harmed by this fiction are the Enron shareholders, not the overall market, behavior that rewards people for accounting fiction instead of economic value creation would send a signal to others at Enron to create further transactions with similar value-destroying characteristics.

The Powers Report, commissioned by the Enron Board of Directors to investigate the activities of Enron's former chief financial officer Andrew Fastow, describes the accounting-driven behavior at Enron as follows:

> Many of the most significant transactions apparently were designed to accomplish favorable financial statement results, not to achieve bona fide economic objectives or to transfer risk. Some transactions were designed so that, had they followed applicable accounting rules, Enron could have kept assets and liabilities (especially debt) off its balance sheet; but the transactions did not follow those rules.
>
> Other transactions were implemented—improperly, we are informed by our accounting advisors—to offset losses. They allowed Enron to conceal from the market very large losses resulting from Enron's merchant investments by creating an appearance that those investments were hedged—that is, that a third party was obliged to pay Enron the amount of the losses—when in fact, that third party was simply an entity in which only Enron had a substantial economic stake. We believe these transactions resulted in Enron reporting earnings from the third quarter of 2000 through the third quarter of 2001 that were almost $1 billion higher than should have been reported.[3]

The Powers Report continues:

> *Asset Sales.* Enron sold assets to LJM [an SPE controlled by Andrew Fastow] that it wanted to remove from its books. The transactions often occurred close to the end of the reporting period. . . . Enron bought back five of the seven assets after the close of the financial reporting period, in some cases within a matter of months; the LJM partnerships made a profit on every transaction, even when the asset it had purchased appears to have declined in market value.[4]

Those quotes reveal the accounting mindset that continues to dominate discussions about Enron. Notably, "Some transactions were designed so that, had they followed applicable accounting rules, Enron could have kept the assets and liabilities (especially debt) off its balance sheet; but the transactions did not follow those rules." In other words, all of this deception could have worked if Enron had followed the accounting rules. However, had it followed the rules, Enron would still not have achieved a bona fide economic result. The company would still have achieved only an accounting result.

That is indicative of how the rules-based system that guides U.S. generally accepted accounting principles (GAAP) has conditioned people to look, not at whether the information presented to the market is a true and fair characterization of the condition of the company, but at whether it complied with the rules. By contrast, if the overriding guidance had been principles based—as in some other countries such as England—it is more likely that managers and professionals would simply have seen Enron's behavior for what it was, a deceptive and fraudulent practice. More important, if the measure of suc-

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cess is not adherence to accounting rules and government regulation but adherence to investor concerns, we would measure success in terms of delivering the highest sustainable risk-adjusted returns, not merely in terms of a pure compliance standard.

Accounting vs. Cash Flows

Accounting is not an exact science. Current accounting standards are a combination of rules and guidelines that run to many thousands of dense pages. A great deal of the complexity inherent in current accounting practice is the result of legislation at the state, federal, and international levels concerning taxes, the regulation of capital markets, corporate governance, social programs, health and safety, and environmental and pension issues, among many others. For accounting standards to incorporate all of the variables inherent in this constantly changing landscape while still providing a framework that can fulfill its original role of reporting historical information to investors is difficult.

Inherently Subjective Art, Not Science

Different companies have different needs, and, as a result, all accounting rules cannot be universally applied in lockstep to all firms. That is why the U.S. rules are referred to as "generally accepted" accounting principles. For example, a rule that all fixed capital assets must be depreciated over 10 years would not suit a steel mill for which 20 years may be more appropriate, and depreciating laptop computers over 10 years would be equally unrealistic. From an economic (i.e., cash flow) viewpoint, depreciation is a non-cash charge and does not affect cash flow, whereas from an accounting viewpoint, depreciation choices can make a significant difference to the accounting "bottom line."

Depreciation schedules are one simple example of an area in which companies and accounting practitioners are left to make some reasonable judgments. Managers and auditors know that in making most of those judgments they will alter the earnings results, and many will alter the balance sheet as well. However, most of those judgments will not alter the cash flow of a business. Hence the increasingly well-known phrase, first recorded in the 1890s: *Earnings are an opinion, cash flow is a fact.*

A sample list of standard accounting issues and how those issues affect earnings and cash flows is given in Table 1.[5]

Most of those issues require managers and auditors to make judgments, and some of those judgments are based on assumptions about the future, for example outcomes of litigation, health and pension liabilities, foreign asset values, and environmental costs. Those assumptions are virtually always detailed in the notes to the annual report and in various regulatory filings and have been for decades. The difficulty is that, as the complexity of legislation and regulation has increased, this analysis has become more difficult and time-consuming. The unfortunate consequence is the continuing use and growth of certain types of investor shorthand, of which the most prominent are price-to-earnings (P/E) multiples; earnings per share (EPS) numbers; and earnings before interest, taxes, depreciation, and amortization (EBITDA).

The shortcomings of P/E and EPS as true measures of value have been well documented over the past 40 years.[6] EBITDA warrants more up-to-date attention because of the prominent role it has played in recent years in promoting the telecom, media, and technology sectors and the false assertion that it is a measure equivalent to cash flow. The reliability of EBITDA as a measure was recently summed up by Warren Buffett: "Among those who talk about EBITDA . . . and those who don't, there are more frauds among those who do. Either they're trying to con you, or they're conning themselves."[7]

Buffett, like many other investors, recognizes that the variability of earnings makes EBITDA an unreliable measure. Using Enron's figures as an example, EBITDA is

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Table 1
Impact of Accounting Variables on Earnings and Cash Flows

Issue	Change in Earnings	Change in Cash Flow
Depreciation—at least three choices and variations within them	Yes	No
Revenue Recognition—on long-term contracts, prepayments, advances, etc.	Yes	No
Mark-to-Market—straightforward in liquid markets, but in illiquid markets requires application of formulas and a range of assumptions	Yes	No
Affiliated Transactions—transfer pricing and royalties, implications for tax and international issues	Yes	Possibly, because of tax issues
Pensions—the asset and liability sides can both be overstated or understated; requires a judgment on future returns of the fund and future liabilities of the fund	Yes	No
Valuation of Foreign Assets—considerations of useful life, exchange rates, and taxation issues	Yes	No
Securitization of Receivables or Other Items—revenue, risk, horizon, and liability issues	Yes	Yes
Foreign Exchange—beginning, mid, and end periods are all usually different and the managerial decisions about how and when to recognize gains and losses are often material	Eventually, but the changes in the balance sheet may be more significant	Yes in terms of repatriation of cash but not necessarily in terms of local currency
Treatment of Stock Options—expensing, valuing, recording	Yes	No
Goodwill—the accounting rationale for the difference between the book and the economic value	Yes	No
Amortization of Goodwill	Yes	No
Income Taxes—deferred, in dispute, tax credits	Yes	Yes
Litigation—estimates and provisions of liability and outcomes	Yes	Not until realized
Customer Returns and Product Defects	Yes	Not until realized
Leases—capitalized versus operating	Yes	No
Allowance for Bad Debts—customers	Yes	No
Provisions and Write-Downs—in banks for loan losses	Yes	No, the money is already gone
Reserves—in insurance companies	Yes	Possibly
Product Liability and Other Contingent Liabilities	Yes	No
Impairment of Long-Lived Assets—i.e., you paid too much and now you need to write it down	Yes	No, you already paid the money; this is just the accounting reconciliation of failure

Table 2
Enron's EBITDA vs. Free Cash Flows ($ millions)

	1997	1998	1999	2000
EBITDA	615	2,205	1,672	2,808
Free cash flow	(5,717)	1,986	(1,108)	(5,256)

contrasted with free cash flow (i.e., cash available to a company that is not required for operations or for reinvestment) in Table 2. The wide disparity in the results serves to remind us that accounting is the starting point of an investment analysis, not the end point.

Modern Corporate Finance and Discounted Cash Flow Analysis

Academics and market practitioners have dramatically advanced our understanding of how markets work and investors behave, which makes it dismaying that the contributions of financial economists have played little or no role in the current public debate. Contributions by Nobel Prize–winning economists such as Harry Markowitz (diversification theory),[8] William Sharpe and John Lintner (the capital asset pricing model),[9] and Merton Miller and Franco Modigliani (the relation between the value of a firm and its capital structure)[10] have been largely ignored in the public post-Enron debate. Yet, as we will discuss later, the markets performed much as financial economists would have expected by consistently reducing the value of Enron, WorldCom, and other corporations to reflect their worsening future prospects, deteriorating cash generation, and increasing risks.

Financial economists observe and measure market behavior over long periods of time and have developed and tested a range of tools for analyzing investments with explicit measures of risk and return. The financial economics definition of the value of a business or an investment is *the present value of a stream of expected future cash flows discounted at an appropriate rate.* That is not the same as a stream of earnings, a multiple of the balance sheet, or a multiple of past results. Valuation is future oriented and based on expected results—keep in mind that investors cannot earn last year's dividends or cash flows, only those of future years.

That is not just an academic measure; it is also a description of how the market actually values investments. To take an example, Warren Buffett, when asked how to value a company at the April 2002 Berkshire Hathaway Annual Meeting, gave the same answer he has been giving for decades: "You just want to estimate a company's cash flows over time, discount them back, and buy for less than that."[11]

Every mainstream corporate finance textbook chooses discounted cash flow (DCF) analysis as its preferred measure for valuation or investment analysis.[12] However, there is no alchemy in this formulation that turns those who apply it into stock market geniuses—forecasts always require judgments, and some people are better at forecasting than others. However, DCF analysis does provide us with a valid economic framework within which to consider our forecasts of an investment or company's expected future returns so that we can price the opportunity.

A DCF analysis has two requirements: establishing a financial framework for the analysis and generating the inputs to populate the framework. Setting the framework requires a reasonable understanding of finance and includes

- creating a free cash flow format (the first step is normally translating the

Valuation is future oriented and based on expected results—keep in mind that investors cannot earn last year's dividends or cash flows, only those of future years.

income statement and balance sheet information into free cash flow);
- estimating an appropriate discount rate (the minimum expected risk-adjusted rate of return);
- selecting a forecast horizon (the length of the forecast reflects the company's competitive advantage, and the forecast horizon will affect the value);
- selecting a residual or terminal value method (the most conservative—normally perpetuation—is usually the most appropriate given the total percentage of the value that this calculation represents); and
- choosing a capital structure—that is, the mix of debt and equity—ideally by iterating to an "optimal" capital structure and reflecting this target capital structure in the estimate of the discount rate.

The art of the analysis comes in making the forecast of sales, costs, fixed and working capital investments, and taxes.

In the past 20 years the growth of computer models has made the first part of this process comparatively easy.[13] The second stage of the analysis, however, involves the quantification of strategic assumptions. A standard strategic analysis can often be gleaned from an analyst's report, or a five-year forecast can simply be taken from a Value Line tear sheet and used for a "quick and dirty" valuation.

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Do investors use those approaches? We think that WorldCom provides a clear example of the difference between, on the one hand, investor expectations and the cash flow–driven analyses that drive equity markets and, on the other hand, the accounting reports that drive regulators and rating agencies. For example, in January 1999, WorldCom stock was worth $75 per share. On the day before the firm announced a $3.9 billion restatement of revenues, the shares were worth $0.83.

While the announced earnings restatement dramatically altered WorldCom's reported earnings and EBITDA, *the accounting restatement did not change its cash flows by a single dollar.* Similarly, the incremental announcements of more wrongdoing at WorldCom look suspiciously like efforts by the insolvency practitioners to overstate the difficulties of the firm as virtually none of these make a material difference to the cash balances or cash generation of the remainder of WorldCom. The market reality is that investors had been anticipating and reacting to the value destruction in WorldCom's operating strategy for years before the accounting restatement or the arrival of the insolvency "experts."

Cash Flows at Enron

Table 3 was constructed from Enron's public cash flow statements in its *2000 Annual Report*[14] and from several of the firm's 2000 filings with the U.S. Securities and Exchange Commission. Then, from a reading of the notes in the *Annual Report*, we made judgments based on the information provided about cash and *noncash revenues* and transactions. The impact of noncash revenues recorded and accepted by Enron's independent auditor Arthur Andersen, LLP., are shaded in gray in Table 3.[15]

Further, for the years ending on December 31, 1998, 1999, and 2000, Enron disclosed pretax gains from sales of merchant assets and investments totaling $628 million, $756 million, and $104 million, respectively, all of which are included in "Other Revenues."[16] Proceeds from those sales were $1,838 million, $2,217 million, and $1,434 million, respectively. In each year, the gains on sales from merchant assets and investments *exceeded the whole of Enron's annualized earnings figures!* The combination of the notes and the reported statements would lead to the results given in Table 4.

The steady growth in net income from year to year may look good to accountants, but investors follow cash flow. The more erratic and deteriorating cash position at Enron gave a truer picture of the firm's performance.

Investors could also have read in Note 1 from Enron's 2000 Annual Report the following:

> Accounting for Price Risk Management. Enron engages in price risk management activities for both trad-

Table 3
Enron's Cash Flow Analysis ($ millions)

	1998	1999	2000
Revenues			
Natural gas and other products	13,276	19,536	50,500
Electricity	13,939	15,238	33,823
Metals	0	0	9,234
Other	4,045	5,338	7,232
Total revenues	31,260	40,112	100,789
Less noncash revenues	(1,984)	(2,533)	(4,794)
Cash revenues	29,276	37,579	95,995
Cash cost of sales	26,381	34,761	94,517
Cash gross margin (deficit)	2,895	2,818	1,478
Operating expenses	2,473	3,045	3,184
Cash operating income (loss)	422	(227)	(1,706)

Table 4
Enron's Net Income and Cash Flows ($ millions)

	1998	1999	2000
Net income	703	893	979
Enron cash flows	(205)	(815)	(2,306)

ing and non-trading purposes. Instruments utilized in connection with trading activities are accounted for using the mark-to-market method. Under the mark-to-market method of accounting, forwards, swaps, options, energy transportation contracts utilized for trading activities and other instruments with third parties are reflected at fair value and are shown as "Assets and Liabilities from Price Risk Management Activities" in the Consolidated Balance Sheet. These activities also include the commodity risk management component embedded in energy outsourcing contracts. Unrealised gains and losses from newly originated contracts, contract restructurings and the impact of price movements are recognized as "Other Revenues." Changes in the assets and liabilities from price risk management activities result primarily from changes in the valuation of the portfolio of contracts, newly originated transactions and the timing of settlement relative to the receipt of cash for certain contracts. The market prices used to value these transactions reflect management's best estimate considering various factors including closing exchange and over-the-counter quotations, time value and volatility factors underlying the commitments.[27]

Goodwill is largely a meaningless number to anyone other than an accountant as it represents cash that has gone out the door to purchase a company for more than its net asset value.

Movements in Enron's share price strongly suggest that the equity market saw through many of Enron's accounting machinations many months before its illegal operating and accounting practices were formally acknowledged.

In 2000 and 2001 this note attracted the attention of some analysts who recognized that there was a risk that the values of some of Enron's positions could have been overstated. As noted previously, one reason for that attention was the lack of any real market for some of the financial instruments in which Enron traded. Enron's own assumptions, estimates, calculations, and questionable wash trades thus allowed it to manufacture valuations.

In addition, as the note suggests, unrealized gains or losses on newly recognized transactions were booked by Enron to "Other Revenue." Even for a *fairly* priced derivatives transaction, such up-front "gains" would actually represent a risk premium paid to Enron for bearing the risk that the transaction could move substantially against it. Nevertheless, Enron still treated those risk premiums as gains when transactions were first initiated.

Stress Testing the Balance Sheet

If an analyst becomes uncomfortable with discrepancies between reported accounting profits and the risk that there is no underlying operating cash generation in some transactions, he normally turns to the balance sheet to "stress test" the result. Stress testing the balance sheet—particularly one composed largely of financial assets—is done from a cash liquidation viewpoint. Adopting that stance together with a more principles-based accounting philosophy as opposed to a pure compliance philosophy should have led to a different interpretation of Enron's numbers.

First, Note 1 implies that the value of the $9 billion in current assets listed as "Assets from Price Risk Management Activities" may have been overstated by as much as 25 percent, or approximately $2 billion.

Second, it would have been reasonable to assume that in a position of financial distress the $7.1 billion of long-term investments in the form of advances to unconsolidated affiliates would become unrecoverable. (Such assets are probably largely illiquid.) Accordingly, the cash value could have been marked down by as much as 50 percent of book value, to approximately $3.5 billion. Indeed, early in 2001 analysts were questioning Enron's management on the value of those assets, as there was a suspicion that a significant portion of them was in failed dotcoms, fiber optic capacity, or other technology-related investments for which 90 percent drops in value during 2000 were not uncommon. Enron remained true to its accounting view of the world, however, and resisted market suggestions to write those positions down. But the market, in turn, remained true to its economic view of risk and return and wrote down the value of Enron's stock to reflect the deterioration in those and other assets.

Third, $9.7 billion in long-term investments was "Assets from Price Risk Management Activities." Those were the assets most likely to have been overstated because of false mark-to-market or wash trades. Those assets also were presumably less liquid than other assets and probably represented the highest proportion of assets in which no other firm was making a market. In the extreme case of a short-term asset liquidation, the cash realized could have been as much as 50 percent less than the amount stated on the balance sheet ($4.9 billion). As a rule of thumb, assuming a 50 percent discount for the liquidation value of contracts in which the firm is essentially the sole market maker is reasonable.

Fourth, Enron booked $3.5 billion of "goodwill." Goodwill is largely a meaningless number to anyone other than an accountant as it represents cash that has gone out the door to purchase a company for more than its net asset value. As virtually no company has a value that is equal to or less than net asset value, merger and acquisition (M&A) transactions almost always create goodwill. As studies by McKinsey, BCG, KPMG, and Deloitte have shown, more than 65 percent of M&A transactions fail to deliver value to the buyer.[18] Given this backdrop of probable economic failure, listing goodwill as an asset, particularly in a distress situation, produces

Table 5
Goodwill Write-Offs and Changes in Market Capitalization

Company	Market Capitalization ($ billions)	Goodwill Write-Off ($ billions)	Change in Market Capitalization ($ billions)	Change in Market Capitalization (%)
AOL	103	54	3.18	3
JDS Uniphase	12	50	0.82	6.8
Lucent	22	10	0.73	3.3
Vivendi	35.5	13	2.84	8

Note: changes in market capitalization are from one day before write-off to one day after the announcement.

highly suspect figures for goodwill, which is in itself a somewhat spurious concept.

Notwithstanding the evidence, in the United States the buyer in a corporate transaction can list goodwill on its balance sheet as an asset. Managers at Enron, WorldCom, and Global Crossing clearly thought this important because it inflated their balance sheets. However, while accountants, regulators, and rating agencies care much about this, markets do not pay much attention to those figures. Table 5[19] shows the scores of billions of dollars written off the asset values of JDS Uniphase, AOL, Lucent, and Vivendi in recent years. In each of those cases and others, the fall in the equity value reflecting the loss of goodwill always occurred far in advance of the actual accounting write-down.

JDS provides the strongest indication that the market recognizes value destruction faster than do accountants, rating agencies, or investment bankers. At the time of the firm's $50 billion write-down, its market capitalization was only $12 billion, less than one-sixth the book value of the equity; the change in value at the announcement of the $50 billion write-down was less than $1 billion.

Enron, with its accounting-oriented mindset, strongly resisted making these write-downs, but the market did so by reducing the firm's share value. In our view, goodwill should have a zero cash value in a distress situation. So, we would reduce the $3.5 billion in goodwill on Enron's balance sheet to zero.

Finally, the cash value of the $5.6 billion of "Other" could have been overstated by as much as 25 percent, depending on the assumptions used to value "Other." From 1997 to 2000 it appears that less than 25 percent, or $1.4 billion, of the "Other" actually had a cash value. A reduction of only $1.4 billion thus may be too generous.

The five points above certainly do not constitute an exhaustive balance-sheet stress test, notably because we have not considered liabilities at all. But even with that simple analysis, it is easy to see where pessimistic assumptions about Enron's balance sheet could have led to a reduction in assets of $15 billion that would have eliminated 100 percent of its equity book value and made the firm technically insolvent long before the company filed for Chapter 11 bankruptcy.

The Role of the Equity Market

Some observers may contend that the analysis of Enron's cash flows in the prior section is easy to do *ex post* but would have been hard to undertake *ex ante*. Hindsight, after all, is 20/20. Some observers argue further that the DCF approach is really just one of many

Perversely, accounting is now more important than ever, and auditors will be significant beneficiaries of the "reform" as the cost of audits and internal management increases, all at the expense of shareholders.

valuation methods. But, in fact, there is a compelling reason to believe that the most important processor of information about corporate performance—the stock market—does indeed reflect a cash flow–based approach.

Indeed, movements in Enron's share price strongly suggest that the equity market saw through many of Enron's accounting machinations many months before its illegal operating and accounting practices were formally acknowledged. While the accountants, regulators, and rating agencies were on the sidelines, the equity market was anticipating a steep fall in Enron's fortunes.

By August 14, 2001, Enron's market capitalization had declined by almost 40 percent from $62 billion to $38 billion. By contrast, other stocks in the U.S. energy sector were basically unchanged to slightly higher for the year to date. By the date of the accounting restatement—November 8, 2001—the share price was down 90 percent (market capitalization down $56 billion) from January 1, 2001. When Enron lost its investment-grade credit rating in late November 2001, the equity was virtually worthless.

Throughout 2001 investors in Enron appear to have been more concerned about the firm's future prospects than about current results. Enron continued to post double-digit growth and EPS numbers throughout 2001, but the share price continued to fall. Investors appear to have been particularly concerned about the following Enron-specific issues:

- the firm's cash-negative position, despite Enron's reported double-digit earnings growth in each quarter of 2001;
- declines in sales profit margins from 5 percent to 1 percent over the prior five years;
- the potential overvaluation of some assets on Enron's balance sheet and suggestions that debt was understated;
- the possibility of conflict-of-interest issues with the firm's SPEs; and
- the overall risk/return characteristics of the business, given the failures in dot-coms and fiber optic markets, suggesting that the firm was actually making investment returns below its cost of capital and had been for some time.

Yet, while the market was sending clear signals of concern about Enron and its future prospects, Enron's external auditor, Andersen, did not qualify any of the quarterly reports or resign as the company's auditor. Nor did the SEC launch an informal inquiry into third-party transactions until October 22, 2001, or a formal inquiry until October 31, 2001. The rating agencies, moreover, did not downgrade Enron below investment grade until November 28, 2001, only days before its bankruptcy.

Equity investors were focused largely on future prospects while regulators appeared to be focused on past events and how they were reported. Enron's management continued to be "laser-focused on earnings per share,"[20] while investors reduced the value of the shares. In short, there is strong reason to believe that, despite Enron's attempts to fool the market, the firm had not entirely succeeded in that endeavor.

The Political Reaction and "Corporate Reform"

"When Dr. Johnson said that patriotism was the last refuge of the scoundrel," an American senator once remarked, "he overlooked the immense possibilities of the word 'reform.'"[21] Despite the sound performance of equity markets in accurately processing the information available and pricing the risk in Enron or WorldCom, while the compliance-driven accounting and disclosure rules failed to reflect those risks, the political focus has remained squarely on the measures and bodies that failed, instead of on reinforcing the measures and groups that processed the available information in the most timely fashion—that is, the equity and debt markets.

On the day after WorldCom's $3.9 billion

The notion that a CEO or CFO at a large company could reasonably "certify" a company's accounts on pain of imprisonment could be propagated only by someone with no practical knowledge of accounting.

revenue restatement announcement (June 27, 2002), the SEC issued an order that required officers at almost 1,000 of the largest publicly traded companies to file sworn statements attesting to the truthfulness of their accounting and disclosure policies by August 14, 2002. In addition to increasing market volatility and imposing huge legal and accounting costs on shareholders, that misguided action effectively entrenches the measures and positions of the bodies that failed the shareholders of Enron, WorldCom, and others. Perversely, accounting is now more important than ever, and auditors will be significant beneficiaries of the "reform" as the cost of audits and internal management increases, all at the expense of shareholders.

Further, that action reinforces the widespread perception among many politicians, commentators, and the general public that the problems at Enron, WorldCom, and other companies are somehow "systemic" in nature—that is, broadly representative of a much bigger problem endemic to U.S. corporate governance. Can this proposition be supported?

Is There a Systemic Problem in the United States?

The notion that corporate irresponsibility is relatively more widespread in the United States than elsewhere is based more on assertion than on any hard empirical evidence. Indeed, many observers would consider existing U.S. laws to already be on the conservative side compared with other international corporate law regimes. One recent study,[22] for example, examined the accounts of more than 70,000 companies from 31 countries from 1990 to 1999, specifically to evaluate the relations between accounting practice, legal protections, and quality of investor protection. The authors of that study concluded that the United States and Great Britain experienced the lowest deviations between corporate cash flows and reported earnings. In other words, in comparison with companies in the other 29 countries, companies in the United States and Great Britain appear to engage the least in "earnings management."

In addition, on the question of the rights afforded to outside investors, the United States, Great Britain, Canada, Hong Kong, India, Pakistan, and South Africa all scored top marks. Although there is always room for improvement, that study and a number of similar ones[23] suggest that the problem may not be quite as widespread in the United States as some commentators would have us believe.

When considering the implications of actions such as the recent SEC requirement for sworn statements by company CEOs and CFOs, it is useful to think about the reporting requirements a typical Fortune 1000 company *already faces*. On average, each of those companies has more than 100 legal entities or business units and operates in more than 50 countries. The ownership interest in each entity is often less than 100 percent, which means that decisions about certain accounting issues are not solely the domain of the U.S. partner—and all of the other countries have different accounting standards. Even the translation from Canadian or English GAAP to U.S. GAAP is a nontrivial task.

As noted earlier, hundreds if not thousands of judgments are made about revenue recognition, cost allocations, capital structures, and other issues in each of those individual entities and again at a consolidated, or holding company, level. Frankly, the notion that a CEO or CFO at a large company could reasonably "certify" a company's accounts on pain of imprisonment could be propagated only by someone with no practical knowledge of accounting and reporting or no practical understanding that that type of order costs real time and substantial money, all of which achieves, at best, a spurious result.

Because the new disclosures are being required under the pain of severe personal penalties for noncompliance, the most likely result will be a significant number of restatements as CEOs and CFOs move from an accounting stance that may have been overly optimistic to one that is likely to be overly cautious. That does not mean that they lied or misrepresented their accounts before; it is simply a recognition that accounting requires, by

Legislative or regulatory efforts to mandate "more responsible corporate behavior" are not the only way to restore confidence in corporate America.

definition, managerial choices, and the bias of those choices will have shifted.

Regulatory moves such as the required SEC disclosures have already imparted significant volatility to U.S. equity markets. A further downturn in the market seems likely,[24] moreover, after the results of the mandated disclosures are published. Companies will be extremely cautious about what they say, and that could further undermine investor confidence in the future performance of the firms—for no good reason. Unfortunately, that in turn could reinforce claims that there is a systemic failure in corporate governance and have the undesirable result of reinforcing in the public mindset the idea that political intervention is the only answer.

Efforts by U.S. companies to compete with one another through creative voluntary disclosures will stagnate in the face of a super-regulator dictating accounting policy.

Voluntary vs. Political Responses

Legislative or regulatory efforts to mandate "more responsible corporate behavior," of course, are not the only way to restore confidence in corporate America. In fact, many proposals—including the Sarbanes-Oxley Corporate Reform Act of 2002 (H.R. 3763)—will probably achieve the opposite result.

At a series of SEC roundtable functions held prior to passage of the Sarbanes-Oxley Act,[25] the clear and overriding opinion of the participants was that it was the job of market participants, not government, to make credible changes. Numerous changes were, in fact, under way even before the Sarbanes-Oxley Act was passed. Consider some examples:

- Many corporations had already passed resolutions restricting the granting of contracts to their auditors for non-audit-related consulting work.
- The boards of the New York Stock Exchange and the National Association of Securities Dealers Automated Quotation System proposed changes, received feedback, and adopted a series of new rules on the independence of corporate directors, the operation and organization of audit committees, and other pro-shareholder-power-oriented initiatives.[26]
- Many securities firms had already adopted the practice of declaring on their reports when they acted for a company in an investment banking or other capacity.
- The rating agencies, notably Standard and Poor's, had already moved to bring their data on company accounts closer to a cash flow result. Moody's went further with its February purchase of KMV for a reported $200 million. KMV models and databases are intended to aid in the credit-rating process by providing explicit guidance, based on equity market movements, to debt issuers and lenders on expected default rates.[27]

In short, the market was already working to heal itself in response to its constituents: shareholders. By contrast, the Sarbanes-Oxley Act contains provisions that will measurably harm investors:

- The act will reduce the *quality* of reports in favor of increasing the quantity. Because accounting is not a precise science and judgments must be made, for executives to avoid any personal risk, the *quality* of the information they provide in their filings may be reduced and the language may become even more guarded to reduce the threat of legal action against senior executives, all of which will increase the quantity of reporting and make the reports less accessible to the average reader.
- The legislation will exacerbate the divide between shareholders and the managerial custodians of their businesses. Managers may be forced to choose between the desires of shareholders for information and shareholders' demand for ongoing improvements in operating performance. The severity of the regulatory demands with their threats of jail and personal bankruptcy are tilting the scales in favor of form filing over value creation. Inevitably, senior managers will spend less time running the busi-

ness and more time with their lawyers than with their shareholders.

- The new accounting oversight body will impose direct costs on publicly traded companies, as well as indirect costs through increased and unnecessary compliance costs and the cost in management time—all of which will ultimately be shouldered by the shareholders. In addition, efforts by U.S. companies to compete with one another through creative voluntary disclosures will stagnate in the face of a superregulator dictating accounting policy. In other words, the current compliance-based system will become *even more compliance based*, despite the obvious benefits presented earlier of a more principles-based approach.
- Global capital flows into the United States will be inhibited by the new law. The vagaries of accounting interpretation and ambiguities in the American legal system will surely lead prudent non-U.S. issuers to review the status of their U.S. listings. The overwhelming business opinion outside the United States before the passage of this act was *already* that the U.S. legal system is highly politicized and actively discriminates against non-U.S. defendants (note U.S. asbestos, trade, and environmental rulings). According to the International Relations Department of the NYSE, more than 10 percent of the securities on the exchange—$1.2 trillion of securities—are from non-U.S. firms. In light of Sarbanes-Oxley, all non-U.S.-domiciled company boards should reconsider the value of any U.S. listing as the legal risk and shareholder costs to maintain those listings are probably too high to justify continuing them.
- The act is also the 21st-century equivalent of economic imperialism, as it arbitrarily dictates the standard of behavior to non-U.S. accounting bodies, foreign-owned companies, and non-American executives.

The worst aspect of the Sarbanes-Oxley Act is that it will, through Section 401 on disclosures, actually reduce the ability of companies to provide reasonable guidance on their future prospects to investors and potential investors. The fear of being sentenced to a jail term of up to 25 years will be a major disincentive to providing any information that could be refuted later. Valuing the firm by forecasting the cash flows and discounting them back at an appropriate rate to a present value just got harder. Investors will have less information about the long-term prospects of a firm, which will in turn reduce their ability to price investments, thus making investors more focused on short-term results, increasing the volatility of stock prices, and, most perversely, increasing the power of Wall Street analysts.

Conclusion

In the pursuit of short-term accounting targets and annual bonuses, Enron executives harmed the wholesale energy markets, damaged the credibility of the derivatives markets, and handed the friends of regulation a powerful political weapon—"corporate sleaze." That has had the combined effect of reducing the attractiveness of new energy projects and increasing U.S. dependence on external providers of energy. It has damaged the credit ratings of all energy traders and precipitated ratings downgrades and liquidity problems that undermine efficiency in energy trading and therefore consumer prices.

Fortunately, this situation may be short-lived as the markets and the reality of U.S. energy demands reassert themselves. Unfortunately, this is at best a 50/50 proposition, as the rating agencies, in particular, are as concerned about their own reputations as they are about energy providers.

What may not be short term is the damage done to trust in business leaders and the regulatory overreaction inflicted on the broader markets. That combination is likely to *permanently* increase market volatility and

Sarbanes-Oxley is the 21st-century equivalent of economic imperialism, as it arbitrarily dictates the standard of behavior to non-U.S. accounting bodies, foreign-owned companies, and non-American executives.

the cost of capital for all U.S. firms to the detriment of everyone with a pension plan, savings plan, insurance, or direct investment portfolio.

Notes

1. Assume here that "fair value" is what the transaction would be worth if negotiated freely on the open market between two competitive firms. For the purpose of this example, suppose fair value is uncontroversial and readily available.

2. In other words, the net present value of any derivative contract at initiation is equal to zero.

3. William C. Powers Jr., Raymond S. Troubh, and Herbert S. Winokur Jr., "Report of Investigation by the Special Investigation Committee of the Board of Directors of Enron Corp," February 1, 2002, p. 4.

4. Ibid., p. 11.

5. The accounting issues listed in this table are generalized and based on U.S. GAAP; in other jurisdictions, other treatments may produce a cash event, primarily because of tax issues.

6. See, for instance, Alfred Rappaport, *Creating Shareholder Value: A Guide for Managers and Investors* (New York: Free Press, 1998).

7. Warren E. Buffett, Speech delivered at the Berkshire Hathaway Annual General Meeting, as reported in Selena Maranjian, "Notes from Omaha," *Motley Fool*, May 7, 2002.

8. Markowitz's seminal work can be found in Harry M. Markowitz, "Portfolio Selection," *Journal of Finance* 7, no. 1 (1952): 77–91; and Harry M. Markowitz, *Portfolio Selection: Efficient Diversification of Investments* (New Haven, Conn.: Yale University Press, 1959).

9. See William F. Sharpe, "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk," *Journal of Finance* 19, no. 3 (1964): 425–42; and John Lintner, "The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets," *Review of Economics and Statistics* 47 (February 1965): 13–37. Lintner did not receive the Nobel Memorial Prize in Economic Sciences.

10. Franco Modigliani and Merton H. Miller's seminal contributions in the area of corporate finance, capital structure, and dividend policy can be found in Franco Modigliani and Merton H. Miller, "The Cost of Capital, Corporation Finance, and the Theory of Investment," *American Economic Review* 48, no. 3 (1958): 261–97; Franco Modigliani and Merton H. Miller, "Dividend Policy, Growth, and the Valuation of Shares," *Journal of Business* 34 (October 1961): 235–64; and Franco Modigliani and Merton H. Miller, "Corporate Income Taxes and the Cost of Capital," *American Economic Review* 53, no. 3 (1963): 433–43.

11. Buffett.

12. See, for example, Stewart C. Myers and Richard A. Brealey, *Principles of Corporate Finance*, 7th ed. (New York: McGraw-Hill, 2003).

13. We have provided a pdf file with a full set of Enron financial statements that allow interested parties to review the historical performance as well as the forecasts that we developed for our analysis. This file is available at www.risktoolz. com/enron.

14. See Enron Corp., *2000 Annual Report*, 2001.

15. Prepared from information provided in ibid. and selected filings by Enron with the Securities and Exchange Commission, and the assistance of Charles Conner, formerly an executive at Enron. The data were synthesized by Charles Conner, Mark Storrie, and Richard Bassett.

16. Enron Corp., Note 4.

17. Ibid., p. 36.

18. See, for example, Mark L. Sirower, *The Synergy Trap: How Companies Lose the Acquisitions Game* (New York: Free Press, 1997).

19. The data in Table 5 were derived from market data provided through links to the respective exchanges for the individual share price performance of the companies noted.

20. Enron Corp., p. 2.

21. Quoted in Matthew Parris, "Another Bold Initiative? No Change There Then," *Sunday Times*, August 10, 2002, p. 22.

22. Christian Leuz, Dhananjay Nanda, and Peter D. Wysocki, "Investor Protection and Earnings Management: An International Comparison," Working paper, Wharton School of the University

of Pennsylvania, University of Michigan Business School, and MIT Sloan School of Management, August 2001.

23. See, for example, Rafael F. LaPorta et al., "Investor Protection and Corporate Governance," *Journal of Financial Economics* 58, nos. 1–2 (2000): 3–27.

24. At this writing in the first week of August 2002.

25. SEC roundtables for 2002, announced in 2001, will address disclosure, regulation, and related market issues. Transcripts are available on the SEC website, www.sec.gov.

26. The complete lists of actions are available on their websites, www.nyse.com and www.nasdaq.com.

27. The authors are not suggesting support for the KMV model; they are simply noting the reaction of one of the rating agencies that recognized the superiority of market information to filed reports.

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